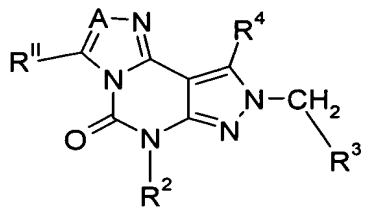
In the Claims

The listing of claims will replace all prior versions and listings of claims in the application.

Listing of claims

1. (Original) A compound having the structural formula (I):



(I)

wherein,

A is N or CR^I;

R^I is, independently at each instance, H, halogen, cyano, nitro, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted alkoxy, optionally substituted amino, optionally substituted carboxy, optionally substituted carbonyl, optionally substituted carbamide, optionally substituted sulfide, optionally substituted sulphone, optionally substituted sulfoxide, optionally substituted sulphamide;

R^{II} is, independently at each instance, H, halogen, cyano, nitro, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted alkoxy, optionally substituted amino, optionally substituted carboxy, optionally substituted carbonyl, optionally substituted carbamide, optionally substituted sulfide, optionally substituted sulphone, optionally substituted sulfoxide, optionally substituted sulphamide;

R^2 is H, optionally substituted alkyl, optionally substituted alkylcycloalkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted cycloalkenyl, optionally substituted cycloalkynyl, optionally substituted aryl, optionally substituted alkoxy, optionally substituted amino, or optionally substituted heterocycle;

R^3 is a monocyclic or bicyclic, saturated or unsaturated, ring system comprising 0, 1, 2 or 3 heteroatoms independently selected from N, O, or S, the ring being substituted by 0, 1, 2 or 3 substituents selected from =O, halogen, $-OR^a$, $C_{1\text{-}6}$alkyl, $C_{1\text{-}6}$haloalkyl, -CN, nitro, $-S(=O)_nR^c$, $-O(CH_2)_mHet$, $-O(CH_2)_mC(=O)Het$, $-O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_mHet$, $-S(CH_2)_mC(=O)Het$, $-S(CH_2)_mC(=O)NR^aR^a$,

$-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-NR^aR^a$, $-NHC(=O)R^a$, $N=NR^a$, aminocarbonyl, phenyl, benzyl; or R^3 is represented by -Het, -Het-Het, R^5,$-R^5$-Het, -Het-R^5, -Het-O-R^5, $-R^5$-R^5, $-R^5$-OR^5;

R^4 is a monocyclic or bicyclic, saturated or unsaturated, ring system, or a vicinal-fused derivative thereof, which may contain from 5 to 12, preferably 5 to 10, ring atoms, 0, 1, 2, 3 or 4 of which are heteroatoms independently selected from N, O, or S, the ring system being substituted by 0, 1, 2 or 3 substituents selected from $B(OH)_2$, vicinal $-OCH_2CH_2O-$, vicinal -$OC_{1\text{-}2}$haloalkylO-, vicinal $-OCH_2O-$, vicinal $-CH_2OCH_2O-$, =O, halogen, $-R^bOR^a$, $-SR^a$, $-OR^a$, $C_{1\text{-}6}$alkyl, $C_{1\text{-}6}$haloalkyl, -CN, $-S(=O)_nR^c$, $-O(CH_2)_m$Het, $-O(CH_2)_mC(=O)$Het, $-O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_m$Het, $-S(CH_2)_mC(=O)$Het, $-S(CH_2)_mC(=O)NR^aR^a$, $-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-NR^aR^a$, $-NHC(=O)R^a$, $-NHC(=O)OR^a$, $N=NR^a$, NO_2, $-C(=O)NR^aR^a$, $-C(=O)NR^aOR^a$, $-C(=O)NR^a(R^bNR^aR^a)$, $-C(=O)NR^a(R^bOR^a)$, $-C(=O)NR^a(R^bS(=O)_nR^a)$, $-C(=O)NR^a(R^b$Het), $-C(=O)OR^a$, $-OC(=O)R^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-S(=O)_2NR^aR^a$, $-NR^aS(=O)_2R^a$, $-S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, $-S(=O)_2NR^a(R^bC(=O)OR^a)$, aminocarbonyl, phenyl, benzyl; or R^4 is represented by $-(CH_2)_nR^5$-Het, $-(CH_2)_nR^d$, -Het, -Het-Het, R^5, $-R^5$-Het, -Het-R^5, -Het-OR^5, R^5-R^5, or $-R^5$-OR^5; or R^4 is represented by $C_{1\text{-}6}$alky, $-NC_{1\text{-}6}$alkyl, or $-N(C_{1\text{-}6}alkyl)_2$ wherein the $C_{1\text{-}6}$alkyl, $-NC_{1\text{-}6}$alkyl, $-N(C_{1\text{-}6}$alkyl) are substituted by 0, 1 or 2 substituents selected from R^a, OR^a, halogen or phenyl wherein R^4 is not $-(CH_2)_zCH_3$, $-(CH_2)_zCH_2OH$, $-(CH_2)_zCO_2H$, or $-(CH_2)_zCO_2C_{1\text{-}6}$alkyl wherein z is 1,2,3,4,5, or 6;

R^5 is independently at each instance, phenyl substituted by 0, 1, 2, or 3 groups selected from halogen, $C_{1\text{-}6}$haloalkyl, $-OC_{1\text{-}6}$haloalkyl, $C_{1\text{-}6}$alkyl, -CN, nitro, $-OR^a$, $-S(=O)_nR^c$, $-O(CH_2)_m$Het, $-O(CH_2)_mC(=O)$Het, $-O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_m$Het, $-S(CH_2)_mC(=O)$Het, $-S(CH_2)_mC(=O)NR^aR^a$, $-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-R^bOR^a$, $-SR^a$, $-C(=O)NR^aR^a$, $-C(=O)NR^aOR^a$, $-C(=O)NR^aR^bNR^aR^a$, $-C(=O)NR^aR^bOR^a$, $-C(=O)NR^aR^bS(=O)_nR^a$, $-C(=O)NR^aR^b$Het, $-C(=O)OR^a$, $-OC(=O)R^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-S(=O)_2NR^aR^a$, $-NR^aS(=O)_2R^a$, $-S(=O)_2NR^aR^bC(=O)NR^aR^a$, or $-S(=O)_2NR^aR^bC(=O)OR^a$;

R^a is, independently at each instance, H, C_{1-6}alkyl, -C(=O)C_{1-4}alkyl, C_{1-4}haloalkyl, phenyl, benzyl, or 5 or 6-memebered ring, saturated or unsaturated heterocycle containing 1,2,3, or 4 heteroatoms independently selected from N, O or S;

R^b is, independently at each instance, C_{1-6}alkyl, -C(=O)C_{1-4}alkyl, C_{1-4}haloalkyl, phenyl, benzyl, or 5 or 6-memebered ring, saturated or unsaturated heterocycle containing 1,2,3, or 4 heteroatoms independently selected from N, O or S;

R^c is C_{1-6}alkyl, C_{1-4}haloalkyl, phenyl or benzyl;

R^d is phenyl substituted by 0, 1 or 2 groups selected from -CN, halogen, nitro, C_{1-6}alkyl, C_{1-4}haloalkyl, -OH, -OR^c, -NR^aR^a, -$S(=O)_nR^c$, -C(=O)NR^aR^a, -C(=O)OR^a, -$NR^aC(=O)R^a$, -$OC(=O)R^a$, $B(OH)_2$, vicinyl -OCH_2CH_2O-, vicinyl -OC_{1-2}haloalkylO-, vicinyl -OCH_2O-, vicinyl -CH_2OCH_2O-, phenyl, benzyl and a 5- or 6-membered ring, saturated or unsaturated heterocycle containing 1, 2, 3 or 4 heteroatoms independently selected from N, O, or S;

m is 1, 2 or 3;

n is 0, 1 or 2;

or a pharmaceutically acceptable salt thereof.

2. (Original) A compound as recited in Claim 1 wherein:

A is N or CR^{20} wherein R^{20} is H, halogen, cyano, C_{1-6}alkyl, C_{1-6}alkenyl, C_{1-6}alkynyl, -OC_{0-4}alkyl, -N(C_{0-4}alkyl)(C_{0-4}alkyl).

3. (Original) A compound as recited in Claim 1 wherein:

R^I is H, halogen, cyano, nitro, C_{1-6}alkyl, C_{1-6}alkenyl, C_{1-6}alkynyl, $S(=O)_n$ C_{1-4}alkyl, -$S(=O)_nN(C_{1-4}alkyl)_n$, -OC_{0-4}alkyl, -N(C_{0-4}alkyl)(C_{0-4}alkyl), -C(=O)OC_{1-4}alkyl, -C(=O) C_{0-4}alkyl, or -C(=O)N(C_{0-4}alkyl)(C_{0-4}alkyl) where n is 0, 1 or 2.

4. (Original) A compound as recited in Claim 1 wherein:

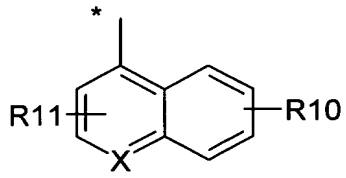
R^{II} is H, halogen, cyano, nitro, C_{1-6}alkyl, C_{1-6}alkenyl, C_{1-6}alkynyl, $S(=O)_n$ C_{1-4}alkyl, -$S(=O)_nN(C_{1-4}alkyl)_n$, -OC_{0-4}alkyl, -N(C_{0-4}alkyl)(C_{0-4}alkyl), -C(=O)OC_{1-4}alkyl, -C(=O) C_{0-4}alkyl, or -C(=O)N(C_{0-4}alkyl)(C_{0-4}alkyl) where n is 0, 1 or 2.

5. (Original) A compound as recited in Claim 1 wherein:

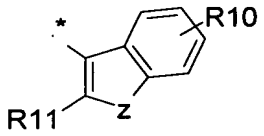
R^2 is C_{1-6}alkylC_{3-6}cycloalkyl or -C_{1-6}alkyl wherein either is optionally substituted with 0, 1, 2 or 3 substituents selected from Het, $S(=O)_nR^c$, $-S(=O)_nNR^aR^a$ halogen, -CN, $-OR^a$, $-NR^aR^a$, $-C(=O)OR^a$, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-OC(=O)C_{1-4}$alkyl, or $-NR^aC(=O)C_{1-4}$alkyl and n is 0, 1 or 2.

6. (Original) A compound as recited in Claim 1 wherein:

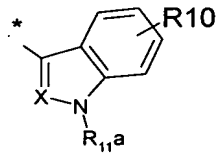
R^3 is selected from formulas (i), (ii), (iii) or (iv) set forth below:



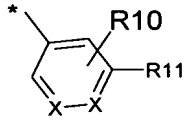
(i)



(ii)



(iii)

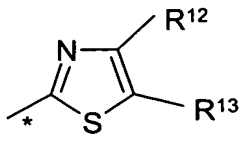


(iv)

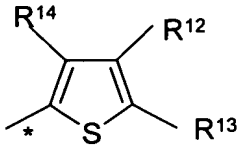
wherein * is the location where (i) or (ii) or (iii) or (iv) is attached to structural formula (I), and X is C or N; and Z is O or S, wherein R^{10} is at any position on the ring and R^{10} and R^{11} are independently at each instance H, R^a, halogen, -CN, nitro, OR^a, CF_3, $-NR^aR^a$, $-C(=O)OR^a$, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-OC(=O)C_{1-4}$alkyl, $-NR^aC(=O)C_{1-4}$alkyl or $-S(=O)_nR^c$; and wherein R^{11a} is R^a, $-S(=O)_2NR^aR^a$ or $-S(=O)_nR^c$ and n=1 or 2.

7. (Original) A compound as recited in Claim 1 wherein:

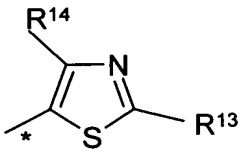
R^4 is selected from formulas (a) to (z) or (aa) or (ab) set forth below:



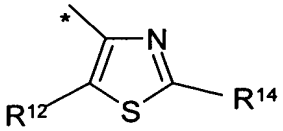
(a)



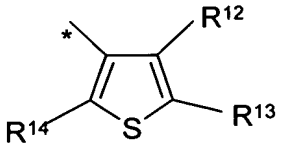
(b)



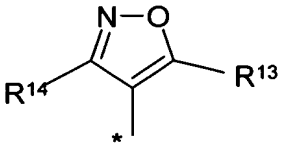
(c)



(d)



(e)



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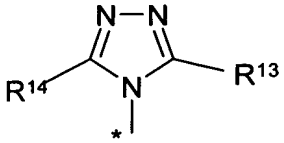

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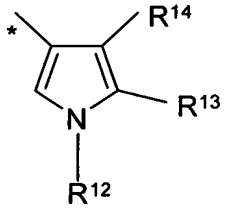

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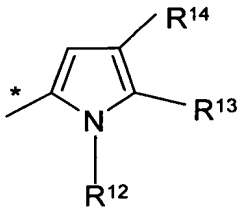
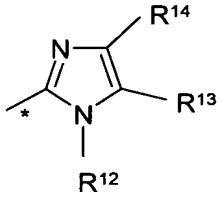


(i)



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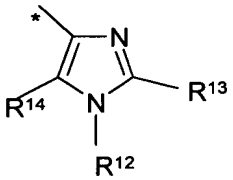

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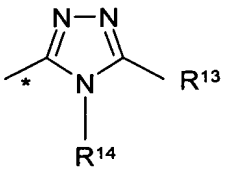

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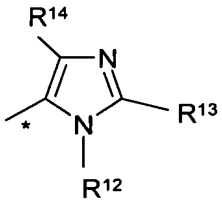
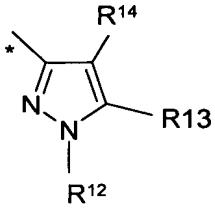
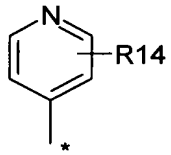


(m)



(n)



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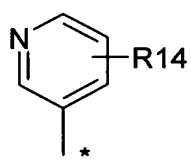

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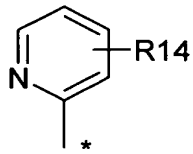

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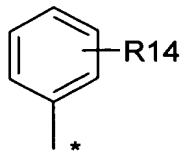

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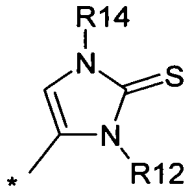

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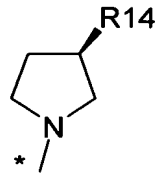

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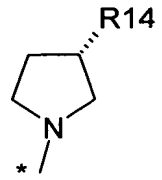

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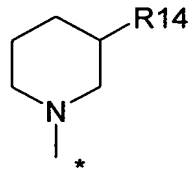

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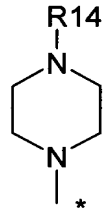

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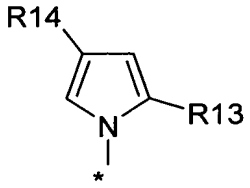

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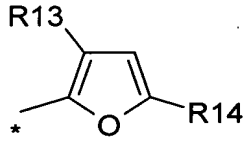

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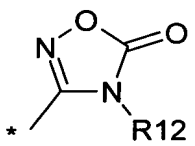

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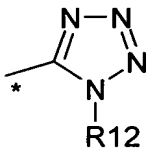
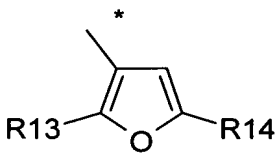


(aa)



(ab)

wherein * is the location wherein R^4 is attached to the ring system and wherein wherein R^{12}, R^{13} and R^{14} are each independently represented by H, Het, C_{1-6}alkyl, -CN, -NR^aR^a, -nitro, -$C(=O)R^a$, -$C(=O)NR^aR^a$, -$C(=O)NR^aS(=O)_2R^a$, -$C(=O)NR^a$-Het, -

$C(=O)NR^aNR^aR^a$, $-C(=O)NR^a(R^bNR^aR^a)$, $-C(=O)NR^a(R^bOR^a)$, $-C(=O)NR^a(R^bS(=O)_2R^a)$, $-C(=O)NR^aR^bHet$, $-C(=O)NR^aOR^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-C(=O)OR^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-OC(=O)R^a$, $-C(=O)R^a$-SR^a, =S, $-NR^aC(=O)R^a$, $-NR^aC(=O)OR^a$, $-NR^aS(=O)_2R^b$, $-C(=NOR^a)R^a$, $-S(=O)_2R^a$, $-S(=O)_2NR^aR^a$, $-S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, or $-S(=O)_2NR^a(R^bC(=O)OR^a$.

8. (Original) A compound as recited in Claim 1 wherein:

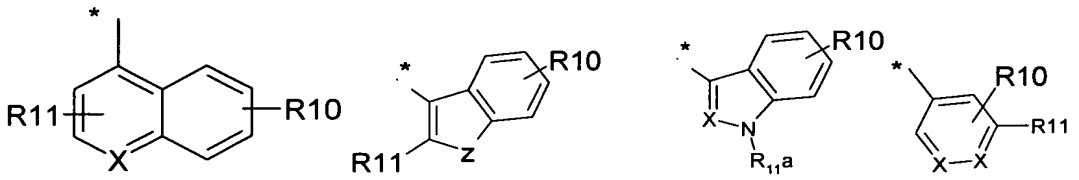
A is N or CR^{20} wherein R^{20} is H, halogen, cyano, C_{1-6}alkyl, C_{1-6}alkenyl, C_{1-6}alkynyl, $-OC_{0-4}$alkyl, $-N(C_{0-4}$alkyl$)(C_{0-4}$alkyl$)$;

R^I is H, halogen, cyano, nitro, C_{1-6}alkyl, C_{1-6}alkenyl, C_{1-6}alkynyl, $S(=O)_n$ C_{1-4}alkyl, $-S(=O)_nN(C_{1-4}$alkyl$)_n$, $-OC_{0-4}$alkyl, $-N(C_{0-4}$alkyl$)(C_{0-4}$alkyl$)$, $-C(=O)OC_{1-4}$alkyl, $-C(=O)C_{0-4}$alkyl, or $-C(=O)N(C_{0-4}$alkyl$)(C_{0-4}$alkyl$)$ where n is 0, 1 or 2;

R^{II} is H, halogen, cyano, nitro, C_{1-6}alkyl, C_{1-6}alkenyl, C_{1-6}alkynyl, $S(=O)_n$ C_{1-4}alkyl, $-S(=O)_nN(C_{1-4}$alkyl$)_n$, $-OC_{0-4}$alkyl, $-N(C_{0-4}$alkyl$)(C_{0-4}$alkyl$)$, $-C(=O)OC_{1-4}$alkyl, $-C(=O)C_{0-4}$alkyl, or $-C(=O)N(C_{0-4}$alkyl$)(C_{0-4}$alkyl$)$ where n is 0, 1 or 2;

R^2 is $-CH_2CH_2CH_3$, $-CH_2$-cyclopropyl, $-CH_2CH(CH_3)_2$, $-CH_2CH_2CH_2F$, $-CH_2$-cyclobutyl, $-CH_2C(CH_3)_3$, $-CH_2CH_2CH(CH_3)_2$, $-CH_2CF_3$, $-CH_2$-methylphenyl, $-CH_2$-phenol, $-CH_2$-(3,5-dimethylisoxazol-4-yl), $-CH_2$-S-phenyl, $-CH_2$-phenylcarboxyl, or $-CH_2SCF_3$;

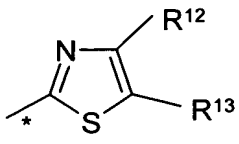
R^3 is selected from formulas (i), (ii), (iii) or (iv) set forth below:



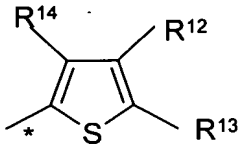
(i) (ii) (iii) (iv)

wherein * is the location where (i) or (ii) or (iii) or (iv) is attached to structural formula (II), and X is C or N; and Z is O or S, wherein R^{10} is at any position on the ring and R^{10} and R^{11} are independently at each instance H, R^a, halogen, -CN, nitro, OR^a, CF_3, $-NR^aR^a$, $-C(=O)OR^a$, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-OC(=O)C_{1-4}$alkyl, $-NR^aC(=O)C_{1-4}$alkyl or $-S(=O)_nR^c$; and wherein R^{11a} is R^a, $-S(=O)_2NR^aR^a$ or $-S(=O)_nR^c$ and n=1 or 2;

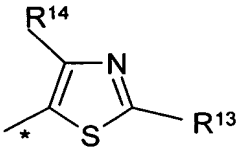
R^4 is selected from formulas (a) to (z) or (aa) or (ab) set forth below:



(a)

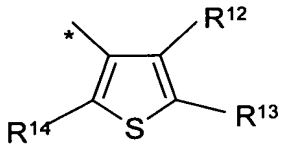


(b)

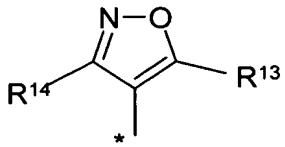


(c)

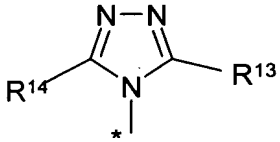
(d)



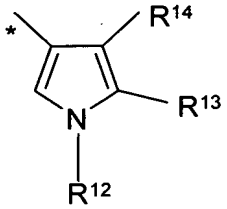
(e)



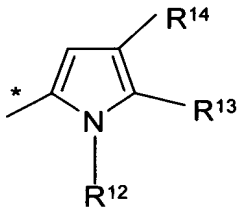
(f)



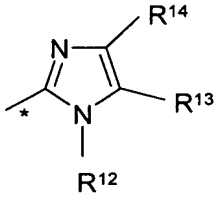
(g)



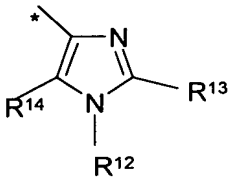
(h)



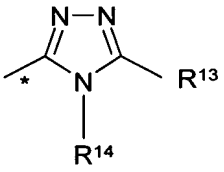
(i)



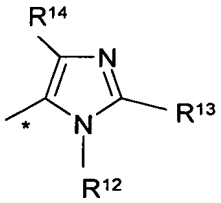
(j)



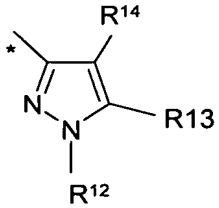
(k)



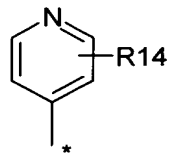
(l)



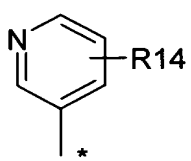
(m)



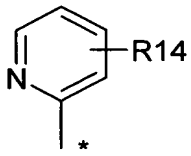
(n)



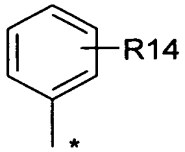
(o)



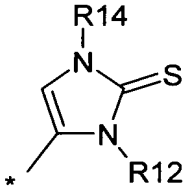
(p)



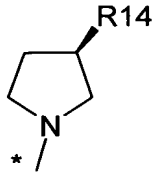
(q)



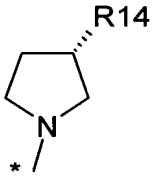
(r)



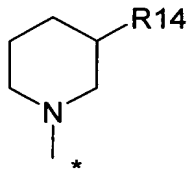
(s)



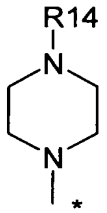
(t)



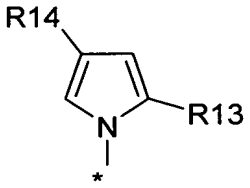
(u)



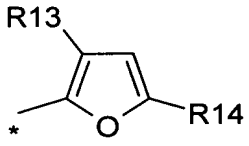
(v)



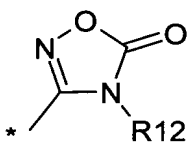
(w)



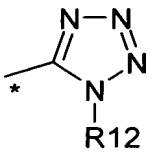
(x)



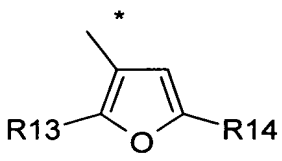
(y)



(z)



(aa)



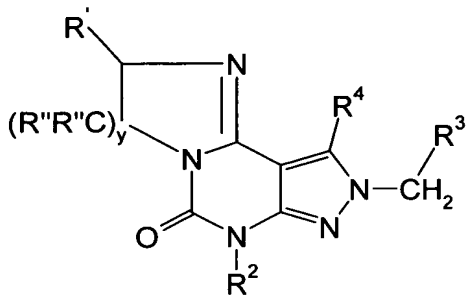
(ab)

wherein * is the location wherein R^4 is attached to the ring system and wherein wherein R^{12}, R^{13} and R^{14} are each independently represented by H, Het, C_{1-6}alkyl, -CN, -NR^aR^a, -nitro, -$C(=O)R^a$, -$C(=O)NR^aR^a$, -$C(=O)NR^aS(=O)_2R^a$, -$C(=O)NR^a$-Het, -

$C(=O)NR^aNR^aR^a$, $-C(=O)NR^a(R^bNR^aR^a)$, $-C(=O)NR^a(R^bOR^a)$, $-C(=O)NR^a(R^bS(=O)_2R^a)$, $-C(=O)NR^aR^bHet$, $-C(=O)NR^aOR^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-C(=O)OR^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-OC(=O)R^a$, $-C(=O)R^a$-SR^a, =S, $-NR^aC(=O)R^a$, $-NR^aC(=O)OR^a$, $-NR^aS(=O)_2R^b$, $-C(=NOR^a)R^a$, $-S(=O)_2R^a$, $-S(=O)_2NR^aR^a$, $-S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, or $-S(=O)_2NR^a(R^bC(=O)OR^a$.

9. (Currently Amended) A compound of ~~formula (I)~~ claim 1 selected from:
5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-5-oxo-6,8-dihydro-5H-pyrazolo[4,3-e][1,2,4]triazolo[4,3-c]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;
5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-methyl-5-oxo-6,8-dihydro-5H-pyrazolo[4,3-e][1,2,4]triazolo[4,3-c]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;
5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-(dimethylamino)-5-oxo-6,8-dihydro-5H-pyrazolo[4,3-e][1,2,4]triazolo[4,3-c]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;
5-[3-amino-8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-5-oxo-6,8-dihydro-5H-pyrazolo[4,3-e][1,2,4]triazolo[4,3-c]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;
5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-5-oxo-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;
5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-methyl-5-oxo-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile;
8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-9-(1-methyl-1H-imidazol-5-yl)-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-5-one;
8-{[5-chloro-1-(methylsulfonyl)-1H-indol-3-yl]methyl}-6-(cyclopropylmethyl)-9-(1-methyl-1H-imidazol-5-yl)-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-5-one;
8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-9-[1-methyl-4-(methylsulfonyl)-1H-pyrrol-2-yl]-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-5-one;
5-[8-{[5-chloro-1-(methylsulfonyl)-1H-indol-3-yl]methyl}-6-(cyclopropylmethyl)-5-oxo-6,8-dihydro-5H-imidazo[1,2-c]pyrazolo[4,3-e]pyrimidin-9-yl]-1-methyl-1H-pyrrole-3-carbonitrile.

10. (Original) A compound having the structural formula (II):



(II)

wherein,

R' is H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl;

R" is independently at each instance H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl;

y is 1 or 2;

R^2 is H, optionally substituted alkyl, optionally substituted alkylcycloalkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted cycloalkenyl, optionally substituted cycloalkynyl, optionally substituted aryl, optionally substituted alkoxy, optionally substituted amino, or optionally substituted heterocycle;

R^3 is a monocyclic or bicyclic, saturated or unsaturated, ring system comprising 0, 1, 2 or 3 heteroatoms independently selected from N, O, or S, the ring being substituted by 0, 1, 2 or 3 substituents selected from =O, halogen, $-OR^a$, C_{1-6}alkyl, C_{1-6}haloalkyl, -CN, nitro, $-S(=O)_nR^c$, $-O(CH_2)_mHet$, $-O(CH_2)_mC(=O)Het$, $-O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_mHet$, $-S(CH_2)_mC(=O)Het$, $-S(CH_2)_mC(=O)NR^aR^a$, $-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-NR^aR^a$, $-NHC(=O)R^a$, $N=NR^a$, aminocarbonyl, phenyl, benzyl; or R^3 is represented by -Het, -Het-Het, R^5,$-R^5$-Het, -Het-R^5, -Het-O-R^5, $-R^5$-R^5, $-R^5$-OR^5;

R^4 is a monocyclic or bicyclic, saturated or unsaturated, ring system, or a vicinal-fused derivative thereof, which may contain from 5 to 12, preferably 5 to 10, ring atoms, 0, 1, 2, 3 or 4 of which are heteroatoms independently selected from N, O, or S, the ring system being substituted by 0, 1, 2 or 3 substituents selected from $B(OH)_2$, vicinal $-OCH_2CH_2O-$, vicinal $-OC_{1-2}$haloalkylO-, vicinal $-OCH_2O-$, vicinal $-CH_2OCH_2O-$, =O, halogen, $-R^bOR^a$, $-SR^a$, $-OR^a$, C_{1-6}alkyl, C_{1-6}haloalkyl, -CN, $-S(=O)_nR^c$, $-O(CH_2)_mHet$, $-O(CH_2)_mC(=O)Het$, -

$O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_mHet$, $-S(CH_2)_mC(=O)Het$, $-S(CH_2)_mC(=O)NR^aR^a$, $-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-NR^aR^a$, $-NHC(=O)R^a$, $-NHC(=O)OR^a$, $N=NR^a$, NO_2, $-C(=O)NR^aR^a$, $-C(=O)NR^aOR^a$, $-C(=O)NR^a(R^bNR^aR^a)$, $-C(=O)NR^a(R^bOR^a)$, $-C(=O)NR^a(R^bS(=O)_nR^a)$, $-C(=O)NR^a(R^bHet)$, $-C(=O)OR^a$, $-OC(=O)R^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-S(=O)_2NR^aR^a$, $-NR^aS(=O)_2R^a$, $-S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, $-S(=O)_2NR^a(R^bC(=O)OR^a)$, aminocarbonyl, phenyl, benzyl; or R^4 is represented by $-(CH_2)_nR^5$-Het, $-(CH_2)_nR^d$, -Het, -Het-Het, R^5, $-R^5$-Het, -Het-R^5, -Het-OR^5, R^5-R^5, or $-R^5$-OR^5; or R^4 is represented by C_{1-6}alky, $-NC_{1-6}$alkyl, or $-N(C_{1-6}alkyl)_2$ wherein the C_{1-6}alkyl, $-NC_{1-6}$alkyl, $-N(C_{1-6}$alkyl) are substituted by 0, 1 or 2 substituents selected from R^a, OR^a, halogen or phenyl wherein R^4 is not $-(CH_2)_zCH_3$, $-(CH_2)_zCH_2OH$, $-(CH_2)_zCO_2H$, or $-(CH_2)_zCO_2C_{1-6}$alkyl wherein z is 1,2,3,4,5, or 6;

R^5 is independently at each instance, phenyl substituted by 0, 1, 2, or 3 groups selected from halogen, C_{1-6}haloalkyl, $-OC_{1-6}$haloalkyl, C_{1-6}alkyl, -CN, nitro, $-OR^a$, $-S(=O)_nR^c$, $-O(CH_2)_mHet$, $-O(CH_2)_mC(=O)Het$, $-O(CH_2)_mC(=O)NR^aR^a$, $-O(CH_2)_mC(=O)OR^a$, $-O(CH_2)_mNR^aR^a$, $-O(CH_2)_mOR^a$, $-S(CH_2)_mHet$, $-S(CH_2)_mC(=O)Het$, $-S(CH_2)_mC(=O)NR^aR^a$, $-S(CH_2)_mC(=O)OR^a$, $-S(CH_2)_mNR^aR^a$, $-S(CH_2)_mOR^a$, $-R^bOR^a$, $-SR^a$, $-C(=O)NR^aR^a$, $-C(=O)NR^aOR^a$, $-C(=O)NR^aR^bNR^aR^a$, $-C(=O)NR^aR^bOR^a$, $-C(=O)NR^aR^bS(=O)_nR^a$, $-C(=O)NR^aR^bHet$, $-C(=O)OR^a$, $-OC(=O)R^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-S(=O)_2NR^aR^a$, $-NR^aS(=O)_2R^a$, $-S(=O)_2NR^aR^bC(=O)NR^aR^a$, or $-S(=O)_2NR^aR^bC(=O)OR^a$;

R^a is, independently at each instance, H, C_{1-6}alkyl, $-C(=O)C_{1-4}$alkyl, C_{1-4}haloalkyl, phenyl, benzyl, or 5 or 6-memebered ring, saturated or unsaturated heterocycle containing 1,2,3, or 4 heteroatoms independently selected from N, O or S;

R^b is, independently at each instance, C_{1-6}alkyl, $-C(=O)C_{1-4}$alkyl, C_{1-4}haloalkyl, phenyl, benzyl, or 5 or 6-memebered ring, saturated or unsaturated heterocycle containing 1,2,3, or 4 heteroatoms independently selected from N, O or S;

R^c is C_{1-6}alkyl, C_{1-4}haloalkyl, phenyl or benzyl;

R^d is phenyl substituted by 0, 1 or 2 groups selected from -CN, halogen, nitro, C_{1-6}alkyl, C_{1-4}haloalkyl, -OH, $-OR^c$, $-NR^aR^a$, $-S(=O)_nR^c$, $-C(=O)NR^aR^a$, $-C(=O)OR^a$, $-NR^aC(=O)R^a$, $-OC(=O)R^a$, $B(OH)_2$, vicinyl $-OCH_2CH_2O-$, vicinyl $-OC_{1-2}$haloalkylO-, vicinyl $-OCH_2O-$, vicinyl $-CH_2OCH_2O-$, phenyl, benzyl and a 5- or 6-membered ring, saturated or

unsaturated heterocycle containing 1, 2, 3 or 4 heteroatoms independently selected from N, O, or S;

m is 1, 2 or 3;

n is 0, 1 or 2;

or a pharmaceutically acceptable salt thereof.

11. (Original) A compound as recited in Claim 10 wherein:

R' is H, C_{1-6}alkyl, C_{1-6}alkenyl, C_{1-6}alkynyl.

12. (Original) A compound as recited in Claim 10 wherein:

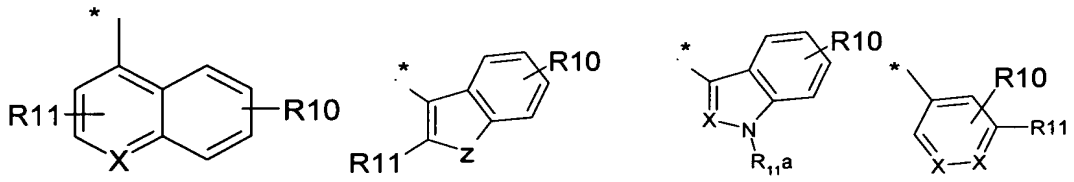
R" is independently at each instance H, C_{1-6}alkyl, C_{1-6}alkenyl, C_{1-6}alkynyl.

13. (Original) A compound as recited in Claim 10 wherein:

R^2 is C_{1-6}alkylC_{3-6}cycloalkyl or -C_{1-12}alkyl wherein either is optionally substituted with 0, 1, 2 or 3 substituents selected from Het, $S(=O)_nR^c$, $-S(=O)_nNR^aR^a$ halogen, -CN, $-OR^a$, $-NR^aR^a$, $-C(=O)OR^a$, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-OC(=O)C_{1-4}$alkyl, or $-NR^aC(=O)C_{1-4}$alkyl and n is 0, 1 or 2.

14. (Original) A compound as recited in Claim 10 wherein:

R^3 is selected from formulas (i), (ii), (iii) or (iv) set forth below:

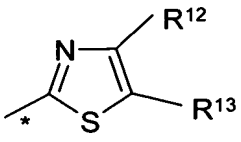


(i) (ii) (iii) (iv)

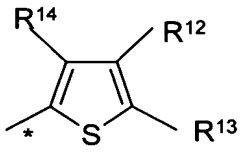
wherein * is the location where (i) or (ii) or (iii) or (iv) is attached to structural formula (I), and X is C or N; and Z is O or S, wherein R^{10} is at any position on the ring and R^{10} and R^{11} are independently at each instance H, R^a, halogen, -CN, nitro, OR^a, CF_3, $-NR^aR^a$, $-C(=O)OR^a$, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-OC(=O)C_{1-4}$alkyl, $-NR^aC(=O)C_{1-4}$alkyl or $-S(=O)_nR^c$; and wherein R^{11a} is R^a, $-S(=O)_2NR^aR^a$ or $-S(=O)_nR^c$ and n=1 or 2.

15. (Original) A compound as recited in Claim 10 wherein:

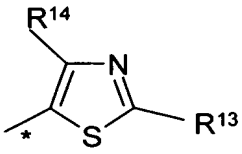
R^4 is selected from formulas (a) to (z) or (aa) or (ab) set forth below:



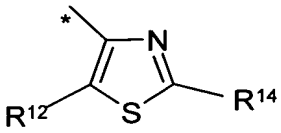
(a)



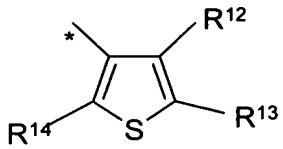
(b)



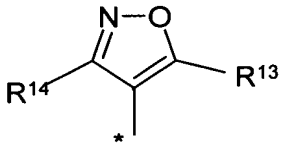
(c)



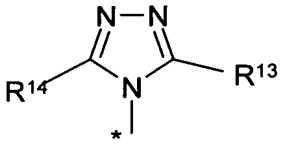
(d)



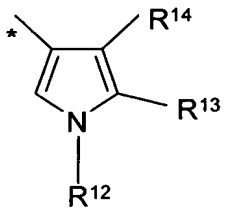
(e)



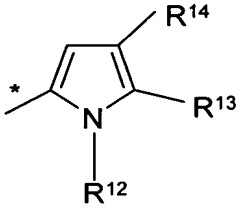
(f)



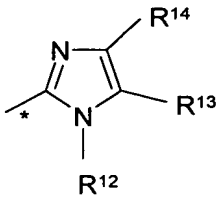
(g)



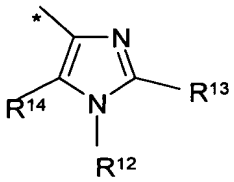
(h)



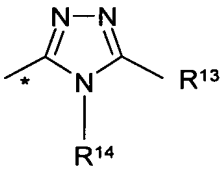
(i)



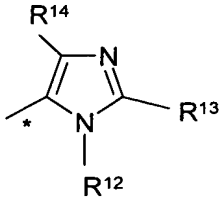
(j)



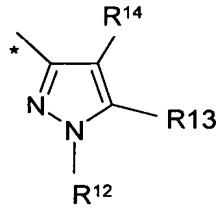
(k)



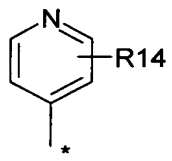
(l)



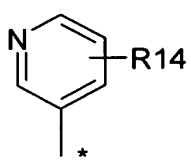
(m)



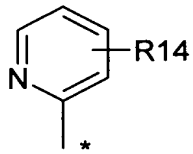
(n)



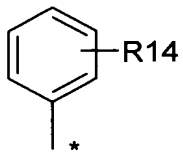
(o)



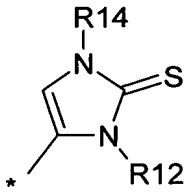
(p)



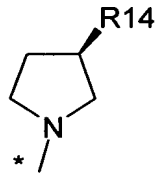
(q)



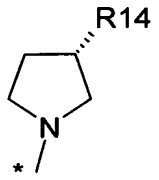
(r)



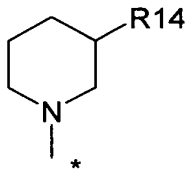
(s)



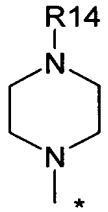
(t)



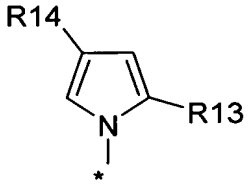
(u)



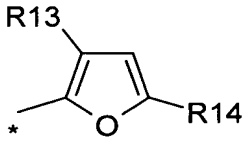
(v)



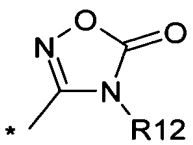
(w)



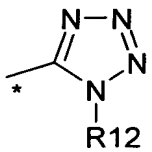
(x)



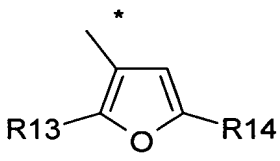
(y)



(z)



(aa)



(ab)

wherein * is the location wherein R^4 is attached to the ring system and wherein wherein R^{12}, R^{13} and R^{14} are each independently represented by H, Het, C_{1-6}alkyl, -CN, -NR^aR^a, -nitro, -$C(=O)R^a$, -$C(=O)NR^aR^a$, -$C(=O)NR^aS(=O)_2R^a$, -$C(=O)NR^a$-Het, -

$C(=O)NR^aNR^aR^a$, $-C(=O)NR^a(R^bNR^aR^a)$, $-C(=O)NR^a(R^bOR^a)$, $-C(=O)NR^a(R^bS(=O)_2R^a)$, $-C(=O)NR^aR^bHet$, $-C(=O)NR^aOR^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-C(=O)OR^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-OC(=O)R^a$, $-C(=O)R^a$-SR^a, =S, $-NR^aC(=O)R^a$, $-NR^aC(=O)OR^a$, $-NR^aS(=O)_2R^b$, $-C(=NOR^a)R^a$, $-S(=O)_2R^a$, $-S(=O)_2NR^aR^a$, $-S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, or $-S(=O)_2NR^a(R^bC(=O)OR^a)$.

16. (Original) A compound as recited in Claim 10 wherein:

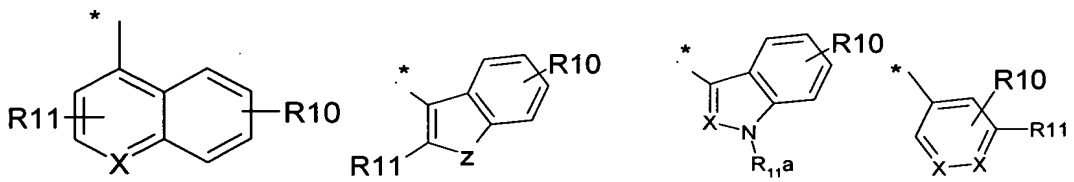
R' is H, $C_{1\text{-}6}$alkyl, $C_{1\text{-}6}$alkenyl, $C_{1\text{-}6}$alkynyl;

R" is independently at each instance H, $C_{1\text{-}6}$alkyl, $C_{1\text{-}6}$alkenyl, $C_{1\text{-}6}$alkynyl;

y is 1;

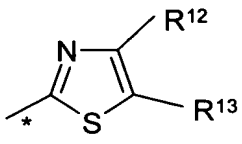
R^2 is $-CH_2CH_2CH_3$, $-CH_2$-cyclopropyl, $-CH_2CH(CH_3)_2$, $-CH_2CH_2CH_2F$, $-CH_2$-cyclobutyl, $-CH_2C(CH_3)_3$, $-CH_2CH_2CH(CH_3)_2$, $-CH_2CF_3$, $-CH_2$-methylphenyl, $-CH_2$-phenol, $-CH_2$-(3,5-dimethylisoxazol-4-yl), $-CH_2$-S-phenyl, $-CH_2$-phenylcarboxyl, or $-CH_2SCF_3$;

R^3 is selected from formulas (i), (ii), (iii) or (iv) set forth below:

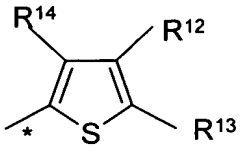


wherein * is the location where (i) or (ii) or (iii) or (iv) is attached to structural formula (I), and X is C or N; and Z is O or S, wherein R^{10} is at any position on the ring and R^{10} and R^{11} are independently at each instance H, R^a, halogen, -CN, nitro, OR^a, CF_3, $-NR^aR^a$, $-C(=O)OR^a$, $-C(=O)R^a$, $-C(=O)NR^aR^a$, $-OC(=O)C_{1\text{-}4}$alkyl, $-NR^aC(=O)C_{1\text{-}4}$alkyl or $-S(=O)_nR^c$; and wherein R^{11a} is R^a, $-S(=O)_2NR^aR^a$ or $-S(=O)_nR^c$ and n=1 or 2;

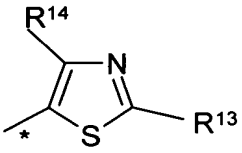
R^4 is selected from formulas (a) to (z) or (aa) or (ab) set forth below:



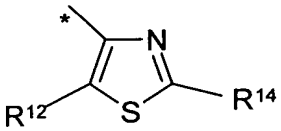
(a)



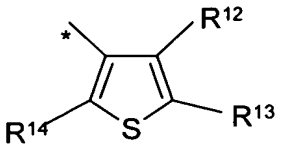
(b)



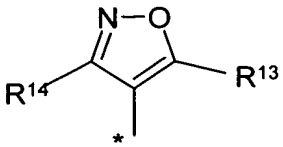
(c)



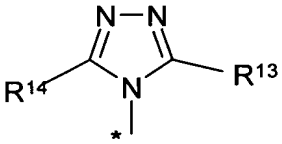
(d)



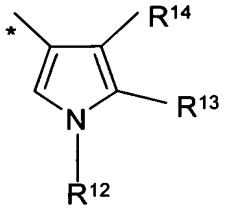
(e)



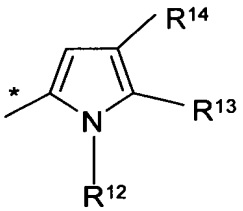
(f)



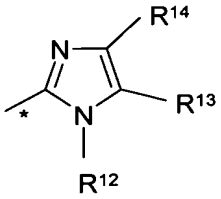
(g)



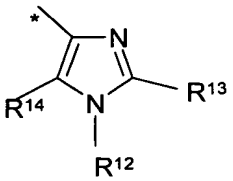
(h)



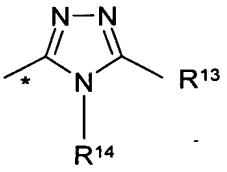
(i)



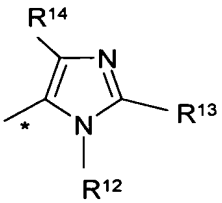
(j)



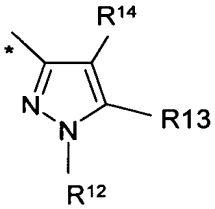
(k)



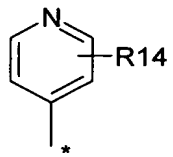
(l)



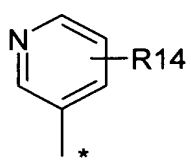
(m)



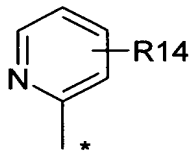
(n)



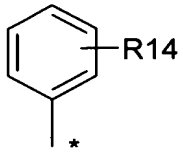
(o)



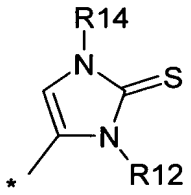
(p)



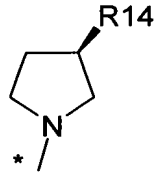
(q)



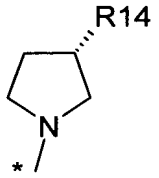
(r)



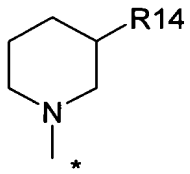
(s)



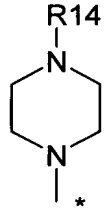
(t)



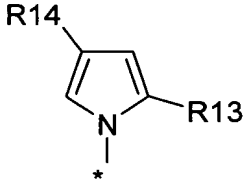
(u)



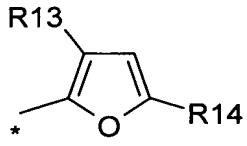
(v)



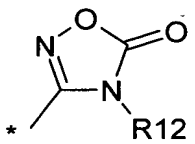
(w)



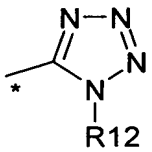
(x)



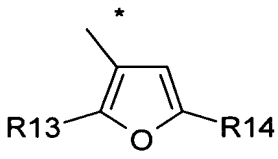
(y)



(z)



(aa)



(ab)

wherein * is the location wherein R^4 is attached to the ring system and wherein wherein R^{12}, R^{13} and R^{14} are each independently represented by H, Het, C_{1-6}alkyl, -CN, -NR^aR^a, -nitro, -$C(=O)R^a$, -$C(=O)NR^aR^a$, -$C(=O)NR^aS(=O)_2R^a$, -$C(=O)NR^a$-Het, -

$C(=O)NR^aNR^aR^a$, $-C(=O)NR^a(R^bNR^aR^a)$, $-C(=O)NR^a(R^bOR^a)$, $-C(=O)NR^a(R^bS(=O)_2R^a)$, $-C(=O)NR^aR^bHet$, $-C(=O)NR^aOR^a$, $-C(=O)R^bNR^aR^a$, $-C(=NOR^a)R^a$, $-C(=NCN)R^a$, $-C(=O)OR^a$, $-C(=O)OR^bNR^aR^a$, $-C(=O)R^a$, $-OC(=O)R^a$, $-C(=O)R^a$-SR^a, =S, $-NR^aC(=O)R^a$, $-NR^aC(=O)OR^a$, $-NR^aS(=O)_2R^b$, $-C(=NOR^a)R^a$, $-S(=O)_2R^a$, $-S(=O)_2NR^aR^a$, $-S(=O)_2NR^a(R^bC(=O)NR^aR^a)$, or $-S(=O)_2NR^a(R^bC(=O)OR^a$.

17. (Currently Amended) A compound of ~~formula (I)~~ claim 1 selected from:
5-{8-[(6-chloroquinolin-4-yl)methyl]-6-isobutyl-5-oxo-2,5,6,8-tetrahydro-3*H*-imidazo[1,2-*c*]pyrazolo[4,3-*e*]pyrimidin-9-yl}-1-methyl-1*H*-pyrrole-3-carbonitrile;5-{8-[(6-chloroquinolin-4-yl)methyl]-6-isobutyl-5-oxo-2,5,6,8-tetrahydro-3*H*-imidazo[1,2-*c*]pyrazolo[4,3-*e*]pyrimidin-9-yl}-1-methyl-1*H*-pyrrole-3-carbonitrile;
5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-methyl-5-oxo-2,5,6,8-tetrahydro-3*H*-imidazo[1,2-*c*]pyrazolo[4,3-*e*]pyrimidin-9-yl]-1-methyl-1*H*-pyrrole-3-carbonitrile;
5-[8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-2-methyl-5-oxo-2,5,6,8-tetrahydro-3*H*-imidazo[1,2-*c*]pyrazolo[4,3-*e*]pyrimidin-9-yl]-1-methyl-1*H*-pyrrole-3-carbonitrile;
5-[(3*R*)-8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-methyl-5-oxo-2,5,6,8-tetrahydro-3*H*-imidazo[1,2-*c*]pyrazolo[4,3-*e*]pyrimidin-9-yl]-1-methyl-1*H*-pyrrole-3-carbonitrile;
5-[(3S)-8-[(6-chloroquinolin-4-yl)methyl]-6-(cyclopropylmethyl)-3-methyl-5-oxo-2,5,6,8-tetrahydro-3*H*-imidazo[1,2-*c*]pyrazolo[4,3-*e*]pyrimidin-9-yl]-1-methyl-1*H*-pyrrole-3-carbonitrile;
5-[9-[(6-chloroquinolin-4-yl)methyl]-7-(cyclopropylmethyl)-6-oxo-2,3,4,6,7,9-hexahydropyrazolo[4,3-*e*]pyrimido[1,2-*c*]pyrimidin-10-yl]-1-methyl-1*H*-pyrrole-3-carbonitrile.

18. CANCELLED.

19. CANCELLED.

20. (Currently Amended) A method for the treatment of infections associated with *H. pylori* comprising administering to a host in need of such treatment a therapeutically effective amount of a compound as defined in ~~any one of claims 1 to 17~~ claim 1.

21. (Currently Amended) A method for the prophylaxis treatment of infections associated with *H. pylori* comprising administering to a host in need of such treatment a therapeutically effective amount of a compound as defined in ~~any one of claims 1 to 17~~ claim 1.

22. (Currently Amended) A method for the treatment or prophylaxis of *H. pylori* infection comprising administering a therapeutically effective amount of a compound as defined in ~~any one of claims 1 to 17~~ claim 1 or a pharmaceutically acceptable salt thereof.

23. (Currently Amended) A pharmaceutical composition comprising a compound as defined in ~~any one of claims 1 to 17~~ claim 1 together with at least one pharmaceutically acceptable carrier, diluent or excipent.